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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/739,204

12/19/2003

Howard A. Mizes

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11/23/2005

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EXAMINER

HUFFMAN, JULIAN D

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/739,204

Applicant(s)

MIZES, HOWARD A.

Examiner

Julian D. Huffman

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-14, 17-19 and 22-32 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 15, 16, 20, 21, 33 and 34 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/18/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
In paragraph 0006, third to last line, the word "is" should be changed to "it".
Appropriate correction is required.

Claim Objections

2. Claims 2-6, 9, 10, 13, 14, 18 and 20-32 are objected to because of the following informalities:

In claims 2 and 20, each occurrence of the word "location" should be changed to "locations".

In claims 4 and 22, second line in last paragraph, the word "with" should be inserted after the word "associated".

Claims 6 and 24 include the step of repeating the pixel location selecting and width determining steps. This language is unclear since claims 4 and 22 do not require determination of width since they use the language "at least one of" in lines 10-12.

In claims 9 and 10, line 2, the word "with" should be inserted after the word "associated".

In claims 27 and 28, line 3, the word "with" should be inserted after the word "associated".

In claims 10 and 28, the language "determined widths and centroids" lacks antecedent basis. As discussed above, claims 4 and 22 use the language "at least one of" and do not require determination of both width and centroid. Further, claims 10 and 28 lack a period at the end of the claim.

In claims 13, 29, 30 and 31, each occurrence of "toner" should be changed to "tone".

Claim 18 lacks a period at the end of the claim.

Claim 34 is dependent from itself. For purposes of examination, it is assumed that claim 34 should depend from claim 33 (see similar claim 16).

Claims 3, 5, 14, 21, 23 and 32 are objected to by way of their dependency from the above referenced claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 17 and 18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 17 and 18 are directed towards printed matter. A mere arrangement of printed matter, though seemingly a "manufacture," is rejected as not being within the statutory classes. See *In re Miller*, 418 F.2d 1392, 164 USPQ 46 (CCPA 1969); *Ex parte*

Gwinn, 112 USPQ 439 (Bd. App. 1955); and *In re Jones*, 373 F.2d 1007, 153 USPQ 77 (CCPA 1967). See MPEP 706.03(a) [R-2] I A.

The claims do not “define either new features of structure or new relations of printed matter to structure, or both” and “substance or language of that which is printed may not constitute patentable subject matter”. “Where the sole distinction set out in the claims over the prior art is in the printed matter, there being no new feature of physical structure and no new relation of printed matter to physical structure, such claims may not be allowed, it is only where the claims define either new features of structure or new relations of printed matter to structure, or both, which new features or new relations give rise to some new and useful function or effect or result that claims may be properly allowed. *Ex Parte Gwinn*.

“The mere arrangement of printed matter on a sheet or sheets of paper does not constitute patentable subject matter”. *In re Russel*, 18 C.C.P.A. (Patents) 1184, 48, F.2d 668, 9 USPQ 181, and *In re Reeves*, 20 C.C.P.A. (Patents) 767, 62 F.2d 199, 16 USPQ 110.

Reference is also made to *In re Hansen* (CCPA) 69 USPQ 332 as an example of subject matter found to be patentable as involving physical structure with printed matter. “Matter did not of itself render the structures patentable; it was merely an incidental part of the structures taken as a whole”.

Accordingly claims 1-16 and 19-34 are *statutory*, since they relate the printed matter to a useful process or program for carrying out the process.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 4-14, 17-19 and 22-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Mizes et al. (U.S. 20050099446 A1).

The applied reference has a common assignee and inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Mizes et al. discloses :

With regards to claim 1, a method for compensating for streak defects (fig. 1) in an image formed using an image forming device (fig. 11, element 1000) that forms the image on a receiving material that is translated through the image forming device along a process direction (0019), comprising:

printing a compensation pattern (fig. 5) usable to determine a difference in gray level between an actual gray level value and an intended gray level value at a cross-process-direction image-forming device pixel location in the image (0019), comprising:

printing a plurality of gray level portions (fig. 5, elements 412, 414, 416 and 418), each gray level portion having a gray level that is different from the other gray level portions and extending along the cross-process-direction, the plurality of gray level portions arranged along the process direction (0049),

printing a first set of alignment marks (430) adjacent to a first end of the plurality of gray level portions, the first set of alignment marks having at least one row of marks extending along the cross-process-direction, and

printing a second set of alignment marks (431) adjacent to a second end of the plurality of gray level portions, the second set of alignment marks having at least one row of marks extending along the cross-process-direction;

scanning the compensation pattern (fig. 7, element S510) to generate a set of scanned image data, the scanned image data defining an image value for each of a plurality of cross-process direction scanned image pixel locations;

analyzing the scanned image data (S530-S590) based on the cross-process direction scanned image pixel locations of the marks of the first and second sets of alignment marks (0019 and 0052), to determine at least one actual gray level value for at least one of the plurality of gray level portions for at least one cross-process-direction image-forming device pixel location (S550);

generating, for each analyzed cross-process-direction image-forming device pixel location, for each analyzed gray level portion of that analyzed cross-process-direction

image-forming device pixel location, a compensation parameter based on the determined actual gray level value for that analyzed gray level portion and the intended gray level value for that analyzed gray level portion (S590).

With regards to claim 4, the method of claim 1, wherein analyzing the scanned image data based on the scanned image pixel locations of the marks of the first and second sets of alignment marks to determine at least one actual gray level value for at least one of the plurality of gray level portions for at least one cross-process-direction image-forming device pixel location comprises:

selecting one of the cross-process direction scanned image pixel locations as a current cross-process direction scanned image pixel location (S530); and

determining, for each of the first and second sets of alignment marks that are associated with the current cross-process direction scanned image pixel location, at least one of a width of that alignment mark and a centroid of that alignment mark (S540);

selecting one of the gray level portions as a current gray level portion and determining, for the cross-process-direction image-forming device pixel location associated the selected cross-process direction scanned image pixel location, the actual gray level value for the selected gray level portion of the associated cross-process-direction image-forming device pixel location based on the at least one of the determined widths and the determined centroids of the first and second associated alignment marks (S550).

With regards to claim 5, the method of claim 4, wherein analyzing the scanned image data further comprises repeating the gray level portion selecting and actual gray level determining steps for each of the plurality of gray level portions (S580).

With regards to claim 6, the method of claim 5, wherein analyzing the scanned image data further comprises repeating the cross-process direction scanned image pixel location selecting and width determining steps for each of the plurality of cross-process direction scanned image pixel locations (S580, the limitation of determining the width is not required by claim 4 (see line 10), thus this limitation need not be taught by the prior art to anticipate the claim.

With regards to claim 7, the method of claim 4, wherein generating, for each analyzed cross-process-direction image-forming device pixel location, for each analyzed gray level portion of that analyzed cross-process-direction image-forming device pixel location, a compensation parameter based on the determined actual gray level value for that analyzed gray level portion and the intended gray level value for that analyzed gray level portion comprises generating the compensation value for that cross-process-direction image-forming device pixel location based on the determined actual gray level value for that gray level portion of the corresponding scanned image pixel location and the intended gray level value for that gray level portion (S590, 0019, 0079).

With regards to claim 8, the method of claim 4, wherein:

determining, for each of the first and second sets of alignment marks that are associated with the current scanned image pixel location, a width of that alignment mark comprises:

determining, for that alignment mark, an average gray level value for each cross-process direction scanner pixel location of that alignment mark along the cross-process direction, developing an intensity vs. cross process position curve, and identifying each side of that alignment mark along the cross-process direction based on the intensity vs. cross process position curve and a determined threshold value; and

determining, for each of the first and second sets of alignment marks that are associated with the current cross-process direction scanned image pixel location, a centroid of that alignment mark comprises:

determining a maximum value on the intensity vs. cross process position curve as the centroid of each alignment mark (claim 4 does not require determination of the width (see line 10), thus the prior art need not disclose this limitation to anticipate the claim).

With regards to claim 9, the method of claim 8, where determining, for the cross-process-direction image-forming device pixel location associated the selected scanned image pixel location, the actual gray level value for the selected gray level portion of the associated cross-process-direction image-forming device pixel location based on the at least one of the determined widths and the determined centroids of the first and second associated alignment marks comprises determining the cross-position process-direction image-forming device pixel location that is associated with the selected scanned image pixel location based on the locations of the determined centroids of the first and second associated alignment marks (0073-0074, S550, S560).

With regards to claim 10, the method of claim 9, where determining, for the cross-process-direction image-forming device pixel location associated the selected

scanned image pixel location, the actual gray level value for the selected gray level portion of the associated cross-process-direction image-forming device pixel location based on the at least one of the determined widths and the determined centroids of the first and second associated alignment marks comprises identifying, based on the determined widths and centroids of the associated first and second alignment marks, the scanned image data pixels of the selected gray level portion (S550, the claim language does not require determining both widths and centroids, the prior art discloses the centroids and thus anticipates the claim language); and

averaging the gray level values of the identified scanned image data pixels to generate the actual gray level value for the selected gray level portion (0051).

With regards to claim 11, the method of claim 1, wherein generating, for each analyzed cross-process-direction image-forming device pixel location, for each analyzed gray level portion of that analyzed cross-process-direction image-forming device pixel location, a compensation parameter based on the determined actual gray level value for that analyzed gray level portion and the intended gray level value for that analyzed gray level portion comprises generating a local tone reproduction curve value for that analyzed gray level value and for that analyzed cross-process-direction image-forming device pixel location that is usable in place of a generalized tone reproduction curve value for the image device, to convert input image data into printable image data such that the actual gray level value that is printed for that cross-process-direction image-forming device pixel location is substantially equivalent to the intended gray level value (0019, S590).

With regards to claim 12, the method of claim 11, further comprising generating a local tone reproduction curve that provides a compensation parameter for each possible intended gray level value for that analyzed cross-process-direction image-forming device pixel location (S590).

With regards to claim 13, the method of claim 12, wherein generating a local toner reproduction curve comprises determining compensation parameters for each possible intended gray level value based on the determined compensation parameters for the plurality of actual gray level portions (S590).

With regards to claim 14, the method of claim 13, wherein determining compensation parameters for each possible intended gray level value comprises interpolating between the determined compensation parameters for the plurality of actual gray level portions for intended gray level values that lie between the gray level values of adjacent ones of the plurality of actual gray level portions (0019).

With regards to claims 19 and 22-32, a storage medium storing instructions for executing the above described method (0093).

With regards to claim 17, a compensation pattern (fig. 5) usable to determine a difference in gray level between an actual gray level value and an intended gray level value at a cross-process-direction image-forming device pixel location in an image formed using an image forming device, comprising:

a plurality of gray level portions (412, 414, 416, 418), each gray level portion having a gray level that is different from the other gray level portions and extending over a plurality of cross-process-direction pixel locations along the cross-process-

direction, the plurality of gray level portions arranged along the process direction (0051),

a first set of alignment marks (430) adjacent to a first end of the plurality of gray level portions, the first set of alignment marks having at least one row of marks extending along the cross-process-direction, and

a second set of alignment marks (431) adjacent to a second end of the plurality of gray level portions, the second set of alignment marks having at least one row of marks extending along the cross-process-direction.

With regards to claim 18, the compensation pattern of claim 17, wherein each alignment mark of the first and second sets of alignment marks is associated with one of the cross-process-direction pixel locations (0052) and is usable both to correlate that cross-process-direction image forming device pixel location with a corresponding cross-process-direction scanned image pixel location within a scanned image of the compensation pattern formed using the image forming device and to determine changes in gray level between an actual gray level value and an intended gray level value at that cross-process-direction image-forming device pixel location based on a measured width of that alignment mark (the marks are capable of being used in the manner claimed).

Allowable Subject Matter

7. Claims 2, 3, 20 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome objections outlined above and in independent form including all of the limitations of the base claim and any intervening claims.

Claims 15, 16 and 33 (and claim 34 if amended to be dependent from claim 33) are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The primary reason for the indication of allowable subject matter in claims 2, 3, 20 and 21, is the inclusion of the steps of/instructions for printing a first set of alignment marks, comprising printing a plurality of rows of marks such that the marks of each row are offset from the marks of other ones of the plurality of rows of the first set and printing a second set of alignment marks, comprising printing a plurality of rows of marks such that the marks of each row are offset from the marks of other ones of the plurality of rows of the second set. It is these steps/instructions found in the claims, as claimed in the combination of, which have not been found, taught or suggested by the prior art of record.

The primary reason for the indication of allowable subject matter in claims 15, 16 and 33 is the inclusion of the step of/instruction for correlating determined line widths of each alignment mark to the gray level values of the gray level portions and the associated compensation parameters. It is this step/instruction found in the claims, as

claimed in the combination of, which has not been found, taught or suggested by the prior art of record.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (571) 272-2147. The examiner can normally be reached on 10:00a.m.-6:30p.m. Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Julian D. Huffman
22 November 2005